
Au

Thi info m den ’ di po i ion , hich along ide kno ledge, kill and beha io ppo p oficienc (ACARA, 2024c). Thi e plaine e plo e he A alian C ic l m p oficienc and along ide p od c i e di po i ion , a ho n in Fig e 1.

-10/T1_.76 Tf06.7.8282 -1.465.47 905081669629 [32727(8484809343´´()69.32703]TJ)Tj969308.1133 9.31019 835989. -6327a0
Figure 1: Ma h p oficienc and

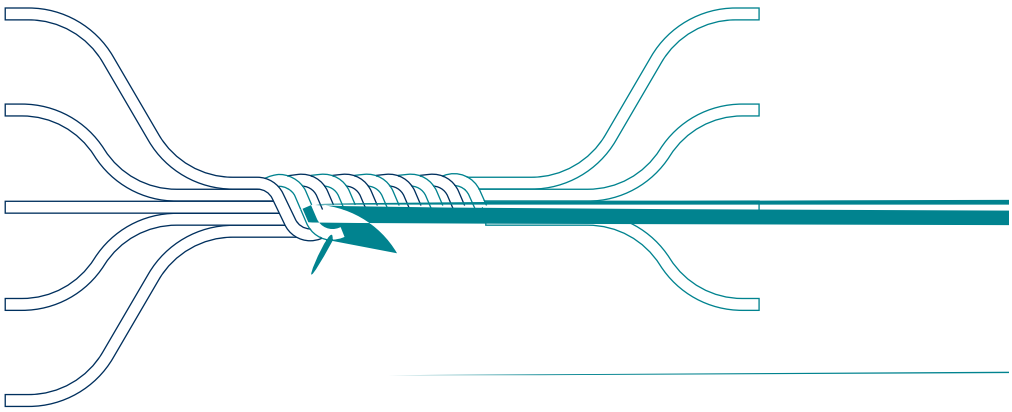
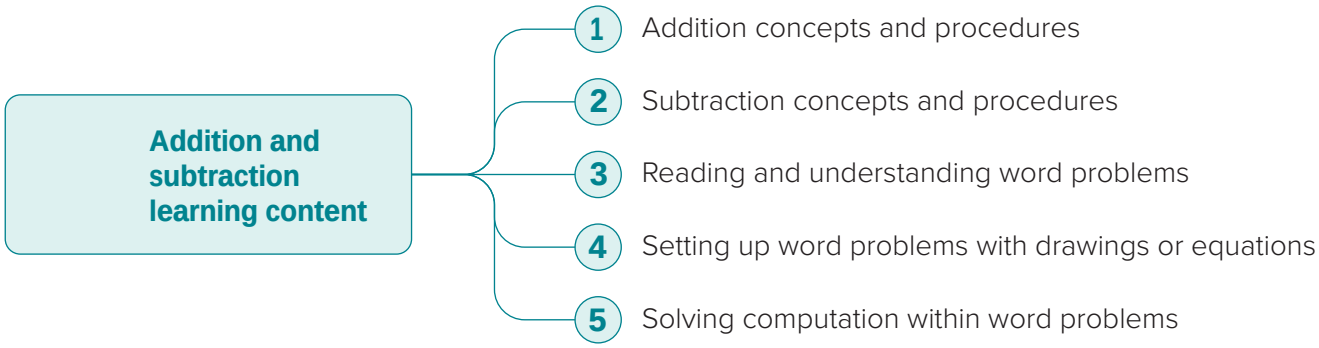


Figure 2: E ample of b eaking p and eq encing ma h con en



Pr m te ral and written language devel ment t gether with maths r ficiency

Ea l li e ac kill a e ma ke of f e cce in bo h li e ac and n me ac (Jack on e al., 2023). Lang age and li e ac kill pa ic la l nde anding and ing o al and i en ma hema ical lang age a e c i ical fo de eloping ma h p oficienc (E pina & F ch , 2022; Riccomini e al., 2015; Wa en & Mille , 2013). Reading and in e p e ing o d p oblem place he b ain nde cogni i e load befo e an ma h ha e en aken place, e peciall if lang age con e and e ample a en' familia o c l all ele an o den . Teache ho ld eek o de elop den ' kill in nde anding and ing ma hema ical lang age. Domain- pecific ma hema ical lang age ho ld be a gh in he con e of le on , a o ded p oblem ma no npack hi lang age e plici l . O al comm nica ion i al o ele an o lea ning ma h , incl ding peaking and li ening, a ell a nde anding ocab la . Teaching ma hema ical lang age o all can be ppo ed b ing ich ma hema ical ep e en a ion , incl ding i al model and e ample (McDonald e al., 2011; Mille & A mo , 2021).

Teache need o be a a e of po en ial diffe ence in ma hema ical e m be een S anda d A alian Engli h and o he lang age , incl ding Fi Na ion lang age (Edmond -Wa hen e al., 2014). S den and hei di po i ion o a d lea ning ma h can benefi f om ing e o ce ha a f om a den ' home lang age (hich ma o ma no be S anda d A alian Engli h) and c l e, and hen make clea an e plici connec ion i h ma hema ical e m (Jo gen en, 2015; Jo gen en [Ze enbe gen], 2016; Mille & A mo , 2021). Ba ie ela ing o lang age, a ell a he con e and c l e of lea ning, can al o be add e ed b ing c l all app op ia e e o ce hen lea ning ma h (Mille e al., 2023). Scaffold ha p o ide acce o meaning h o gh m l iple o ce , incl ding i al, a al and p in o ce , a e mo effec i e (Cen e fo Ed ca ion S a i ic and E al a ion, 2021). Ma hema ical a k ha a e linked o a a ie of eal- o ld applica ion and hinking alo d o make he e connec ion an pa en d ing eaching can help den ecogni e applica ion and nde l ing pa e n fo he di e e a he can appl ma hema ical p oced e (Collin e al., 1991).

Im licati ns f r licy and ractice

E idence-ba ed eaching p ac ice (ch a ho e de c ibed in AERO' model of lea ning and eaching) a e eq i ed in all ma h cla oom o align i h he p oce e of acq i ing, e aining, e ie ing and con olida ing lea ning. Teache need bo h gene al pedagogical kno ledge and pecific ma hema ical con en kno ledge o e ec e he e p ac ice effec i el .

Sc eening den ea l and of en can en e ha den ecei e a ge ed and imel in e en ion . Ea l in e en ion and ma h ppo i c i ical o en e all child en can e pe ience cce and he eb de elop po i i e di po i ion fo lea ning.

C ic l m de elopmen ho ld eq ence lea ning app op ia e o he hie a chical, c m la i e na e of ma h . Teaching and lea ning plan ho ld fi e plici l each ela ed kill and kno ledge and gi e oppo ni ie o p ac i e. Open and comple a k i h man po ible pa h o ol ion ho ld follo .

Lang age eq i emen of ma hema ical a k m be ecogni ed, planned fo , e plici l a gh and, hen den a e ead , connec ed o eal- o ld, ele an and con e - pecific lea ning oppo ni ie . Thi ho ld be eflec ed in c ic l m e o ce and eaching and lea ning p og am and ma e ial .

Ackn wledgement

AERO’ o k i made po ible b he join f nding i ecei e f om Common eal h, a e and e i o go e nmen . AERO o ld like o ackno ledge he ppo of B endan Lee fo iden if ing and mma i ing e ea ch ele an o an A alian ma hema ic eaching con e ha info med he de elopmen of hi e plaine . We o ld al o like o hank he Fi Na ion E pe Refe ence G o p and a io e e nal e pe ho e ie ed and p o ided feedback on hi e plaine .

References

A alian C ic l m, A e men and Repo ing A ho i . (2024a). *Mathematics proficiencies*. h p :// .a alianc ic l m.ed .a / e o ce /ma hema ic -p oficiencie /

A alian C ic l m, A e men and Repo ing A ho i . (2024b). *Numeracy*. . 6TEBT JETEMC /P 08. 1 4 (en-GB)

Collin , A., B o n, J. S., & Hol m, A. (1991). Cogni i e app en ice hip: Making hinking i ible. *American Educator, 15*(3), 6 11, 38 46. h p :// .af .o g/ae/ in e 1991/collin _b o n_hol m

Co ncil of A alian Go e nmen Ed ca ion Co ncil. (2019). *The Alice Springs (Mparntwe) Education Declaration*. h p :// .ed ca ion.go .a /alice- p ing -mpa n e-ed ca ion-decla a ion/ e o ce / alice- p ing -mpa n e-ed ca ion-decla a ion

C o e, A. R. (2010). ˙Wha ' ma h go o do i h i ? : N me ac and ocial die ed ca ion. *The Social Studies, 101*(3), 105 110. h p ://doi.o g/10.1080/00377990903493846

Da i -Kean, P. E., Domina, T., K hfeld, M., Elli , A., & Ge hoff, E. T. (2022). I ma e ho o a : Ea l n me ac ma e p edic high chool ma h co e- aking and college a endance. *Infant and Child Development, 31*(2), e2281. h p ://doi.o g/10.1002/icd.2281

de B in, K., Ke el, E., F anci , M., Fo ga , H., & F ie , R. (2023). *Supporting students significantly behind in literacy and numeracy: A review of evidence-based approaches.* A alian Ed ca ion Re ea ch O gani a ion & Mona h Uni e i . h p :// .ed e ea ch.ed .a / e ea ch/ e ea ch- epo / ppo ing- den - ignifican l -behind-li e ac -n me ac

D nlo k , J., Ra on, K. A., Ma h, E. J., Na han, M. J., & Willingham, D. T. (2013). Imp o ing den ' lea ning i h effec i e lea ning echniq e : P omi ing di ec ion f om cogni i e and ed ca ional p cholog . *Psychological Science in the Public Interest*, *14*(1), 4 58. h p ://doi.o g/10.1177/1529100612453266

Edmond -Wa hen, C., O en , K., Sakopa, P., & Bino, V. (2014). Indigeno lang age and ma hema ic in elemen a chool . In J. Ande on, M. Ca anagh, & A. P e co (Ed .), *Proceedings of the 37th Annual Conference of the Mathematics Education Research Group of Australasia: Curriculum in Focus: Research Guided Practice* (pp. 207 214). Ma hema ic Ed ca ion Re ea ch G o p of A ala ia.

E pina , D. R., & F ch , L. S. (2022). The effec of lang age in c ion on ma h de elopmen .